

IN THE CLAIMS:

1. (Currently Amended) A computer-readable recording medium used for storing data, ~~encoded with computer executable instructions for storing data,~~ comprising a data structure encoded on the computer readable recording medium for processing by a computer program to provide a video output on a display device, the data structure including:

5 a digital stream generated by multiplexing a video stream and a graphics stream,
wherein:

the graphics stream includes a plurality of display sets each of which is used for a graphics display;

the display set includes a control segment and graphics data, the control segment
10 including time information that designates an active period of the control segment in the display set on a reproduction time axis of the video stream; and

when the active period of the control segment in the display set overlaps with an active period of a control segment in an immediately preceding display set, the time information designates the active period of the control segment in the display set to start at or after a time at
15 which, during the active period of the control segment in the immediately preceding display set, transfer of graphics generated by decoding graphics data in the immediately preceding display set is completed.

2.-8. (Cancelled)

9. (Currently Amended) A reproduction apparatus for reproducing a digital stream generated by multiplexing a video stream and a graphics stream,

wherein the graphics stream includes a plurality of display sets each of which is used for a graphics display,

5 the display set includes a control segment and graphics data, the control segment including time information that designates an active period of the control segment in the display set on a reproduction time axis of the video stream,

 when the active period of the control segment in the display set overlaps with an active period of a control segment in an immediately preceding display set, the time information
10 designates the active period of the control segment in the display set to start at or after a time at which, during the active period of the control segment in the immediately preceding display set, transfer of graphics generated by decoding graphics data in the immediately preceding display set is completed,

 the reproduction apparatus comprising:

15 a video decoder operable to decode the video stream to generate a moving picture;
 and

 a graphics decoder operable to decode the graphics stream to generate graphics,
~~and overlay the graphics and the moving picture, wherein:~~

 the graphics stream includes a plurality of display sets each of which is used for a
20 graphics display, the display set including a control segment and graphics data; and

 the graphics decoder performs pipeline processing, by starting processing the display set at or after a time at which, during an active period of a control segment in an immediately preceding display set, transfer of graphics generated by decoding graphics data in the immediately preceding display set to a buffer is completed.

10. (Original) The reproduction apparatus of Claim 9, wherein:

the buffer is an object buffer for storing graphics generated by decoding;

the graphics decoder includes:

a processor operable to decode the graphics data in the display set to generate

5 graphics, and transfer the graphics to the object buffer; and

a controller operable to read graphics from the object buffer based on the control segment in the display set, and overlay the read graphics and the moving picture; and

in the pipeline processing, the processor transfers the graphics generated by decoding the graphics data in the display set to the object buffer, whilst simultaneously the
10 controller reads graphics from the object buffer based on the control segment in the immediately preceding display set.

11. (Original) The reproduction apparatus of Claim 10, wherein:

the control segment in the display set is provided at a beginning of the display set;

and

the controller decodes the control segment, and, in accordance with a decoding
5 result of the control segment, reads the graphics from the object buffer and displays the read graphics.

12. (Original) The reproduction apparatus of Claim 11, wherein:

the control segment in the display set is contained within one packet; and

the controller starts decoding the control segment at a time shown by a decoding time stamp written in the packet, and starts displaying the graphics at a time shown by a
5 presentation time stamp written in the packet.

13.-17. (Cancelled)

18. (Original) A method of recording onto a recording medium, comprising the steps of:

generating application data; and

recording the application data to the recording medium, wherein:

5 the application data includes a digital stream generated by multiplexing a video stream and a graphics stream;

the graphics stream includes a plurality of display sets each of which is used for a graphics display;

the display set includes a control segment and graphics data, the control segment
10 including time information that designates an active period of the control segment in the display set on a reproduction time axis of the video stream; and

when the active period of the control segment in the display set overlaps with an active period of a control segment in an immediately preceding display set, the time information designates the active period of the control segment in the display set to start at or after a time at
15 which, during the active period of the control segment in the immediately preceding display set, transfer of graphics generated by decoding graphics data in the immediately preceding display set is completed.

19. (Previously Presented) A computer-readable medium storing a computer program used for enabling a computer to reproduce a digital stream generated by multiplexing a video stream and a graphics stream,

wherein the graphics stream includes a plurality of display sets each of which is
5 used for a graphics display,

the display set includes a control segment and graphics data, the control segment
including time information that designates an active period of the control segment in the display
set on a reproduction time axis of the video stream,

when the active period of the control segment in the display set overlaps with an
10 active period of a control segment in an immediately preceding display set, the time information
designates the active period of the control segment in the display set to start at or after a time at
which, during the active period of the control segment in the immediately preceding display set,
transfer of graphics generated by decoding graphics data in the immediately preceding display
set is completed,

15 the program enabling the computer to perform the steps of:

decoding the video stream to generate a moving picture; and

decoding the graphics stream to generate graphics, and overlaying the graphics
and the moving picture, wherein:

the graphics stream includes a plurality of display sets each of which is used for a
20 graphics display, the display set including a control segment and graphics data; and

the step of decoding the graphics stream perform pipeline processing, by starting
processing the display set at or after a time at which, during an active period of a control segment
in an immediately preceding display set, transfer of graphics generated by decoding graphics
data in the immediately preceding display set to a buffer is completed.

20. (Previously Presented) A method of reproducing a digital stream generated by multiplexing a video stream and a graphics stream,

wherein the graphics stream includes a plurality of display sets each of which is used for a graphics display,

5 the display set includes a control segment and graphics data, the control segment including the time information that designates an active period of the control segment in the display set on a reproduction time axis of the video stream,

when the active period of the control segment in the display set overlaps with an active period of a control segment in an immediately preceding display set, the time information
10 designates the active period of the control segment in the display set to start at or after a time at which, during the active period of the control segment in the immediately preceding display set, transfer of graphics generated by decoding graphics data in the immediately preceding display set is completed,

the method comprising the steps of:

15 decoding the video stream to generate a moving picture; and

decoding the graphics stream to generate graphics, and overlaying the graphics and the moving picture, wherein:

the graphics stream includes a plurality of display sets each of which is used for a graphics display, the display set including a control segment and graphics data; and

20 the step of decoding the graphics stream performs pipeline processing, by starting processing the display set at or after a time at which, during an active period of a control segment

in an immediately preceding display set, transfer of graphics generated by decoding graphics data in the immediately preceding display set to a buffer is completed.